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Disclosed connectivity of the capitals, assurance (quality) and information asymmetry – An interaction analysis for the case of integrated reporting

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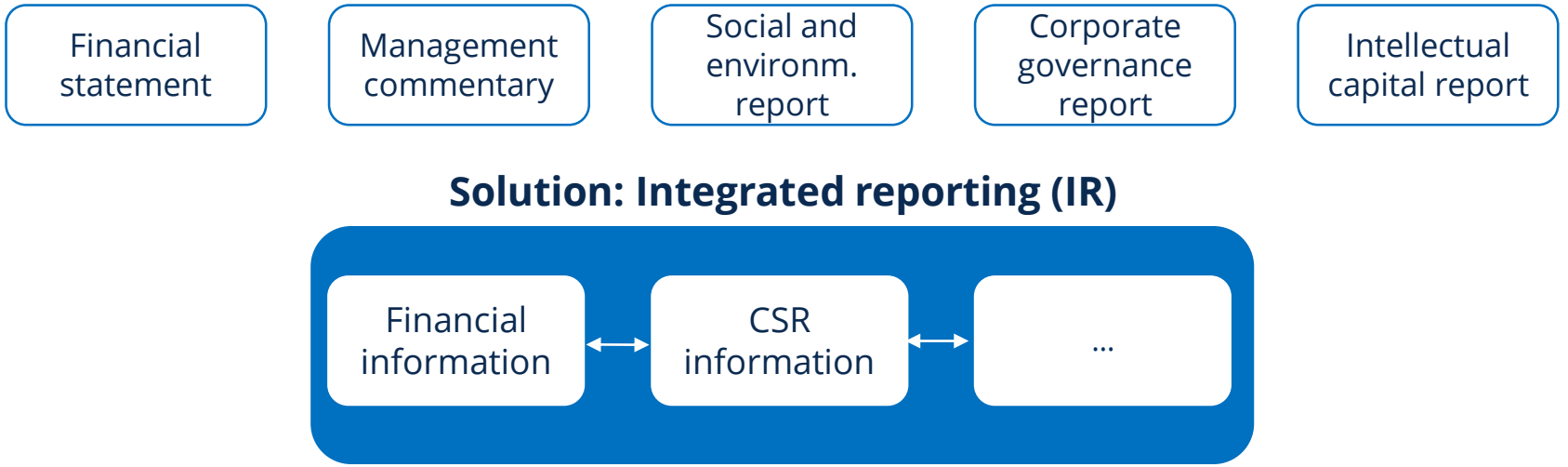
Motivation

Problem 1: Isolated reports with disconnected information



Problem 2: Credibility risks

"Assurance is an important tool [...] to raise the reliability of the report content. Investors [...] can better evaluate the quality and the correctness of the data." (Munich Airport, 2014)

"Only assured [IR] will have a future." *(Goicoechea et al., 2019)*

Research question and aim

Research question:

*How are the **disclosed connectivity of the capitals**, **assurance (quality)**, and their **interaction** associated with **information asymmetry** among capital market participants?*

Research aim:

- Insights on **investors' perception** of assurance (quality) for integrated reports
- Insights on the **effectiveness of current assurance practice** for unstandardized integrated reports
- Analysis of the **importance of both disclosed connectivity of the capitals and assurance quality** for a decrease of information asymmetry

Theoretical foundation

- **Voluntary disclosure theory** proposes that voluntary disclosures decrease information asymmetry if report users perceive disclosures as credible (Leuz & Verrecchia, 2000)
- **Credibility concerns** exist also for disclosures within integrated reports (Goicoechea et al., 2019; Reimsbach et al., 2018)
- Companies are **free in the choice** of assurance providers and can **adjust the assurance process** according to their cost-benefit considerations
- Assurance standards used for the assurance of sustainability reports are also applied for IR → **ISEA3000 and AA1000AS** (Ackers & Eccles, 2015; Stawinoga & Velte, 2017)
- Based on **DeAngelo's (1981) definition of audit quality**, we define assurance quality as the probability that the assurance provider
  - (i) **discovers** irregularities regarding the information disclosed in the integrated report and
  - (ii) **reveals** these irregularities in the assurance statement

What do we already know?

- Literature revealed that IR has **positive capital markets effects** (e.g., Zhou et al., 2017; Barth et al., 2017)
- Users of assurance statements are confronted with **substantial heterogeneity of assurance quality** for integrated reports (Dumitru & Guse, 2016; Stawinoga & Velte, 2017)
- Most of **IR assurance studies are conceptual** and deal with the challenges of developing appropriate assurance processes
- Empirical IR research on assurance quality is **mostly descriptive** (e.g., Dumitru & Guse, 2016)
- Insights on the **economic consequences of assurance (quality) for IR are limited** to experiments (e.g., Reimsbach et al., 2018)
- The **interaction of the disclosed connectivity of the capitals and assurance (quality)** to decrease information asymmetry has been neglected

Data collection

Assurance statements:

- **Manual content analysis** of **176 voluntary assurance statements** included in 269 integrated reports of the years 2013 to 2015
- **Coding categories for assurance quality** (score from 0 to 24) are derived in analogy to O'Dwyer and Owen (2005)/Perego and Kolk (2012) based on assurance standards AA1000AS and ISEA3000 (revised)

Integrated reports:

- **Manual content analysis** of the **269 integrated reports** themselves regarding the disclosed connectivity of the capitals
- **Disclosed connectivity of the capitals** (score from 1 to 6) is measured in line with Grassmann et al. (2019) to capture this distinguishing feature of integrated reports

Further data:

- From Thomson Reuters Datastream, Asset4, LexisNexis and GRI database

Sample selection process

Item	2013	2014	2015	Total
Initial Sample (Forbes Global 2000)	2,000	2,000	2,000	6,000
Thereof integrated reports	85	89	100	274
Exclusion of non-English reports	3	2	0	5
Final number of integrated reports	*82*	*87*	*100*	*269*
Thereof assured integrated reports	**52**	**58**	**66**	**176**

- Integrated reports identified through "**GRI Sustainability Disclosure Database**" and "**IR Examples Database**" (following e.g., García-Sánchez et al., 2013; Sierra-García et al., 2015)

Regression models

Model 1: Assurance and information asymmetry

$$\ln(Spread) = \beta_0 + \beta_1 ConnectSc + \beta_2 As + \beta_3 \ln(Tover) + \beta_4 \ln(Vola) + \beta_5 \ln(Mv) + \beta_6 \ln(Freefl) + \beta_7 FinAud + \beta_8 NonfinSc + \beta_9 Auditcom + \beta_{10} GRI + \beta_{11} News + \beta_{12_i} \sum_{i=1}^{9} Ind_i + \beta_{13_i} \sum_{i=1}^{5} Cont_i + \beta_{14} Year2014 + \beta_{15} Year2015 + \varepsilon$$

Model 2: Assurance quality and information asymmetry

$$\ln(Spread) = \beta_0 + \beta_1 ConnectSc + \beta_2 AsQual + \beta_3 \ln(Tover) + \beta_4 \ln(Vola) + \beta_5 \ln(Mv) + \beta_6 \ln(Freefl) + \beta_7 FinAud + \beta_8 NonfinSc + \beta_9 Auditcom + \beta_{10} GRI + \beta_{11} News + \beta_{12_i} \sum_{i=1}^{9} Ind_i + \beta_{13_i} \sum_{i=1}^{5} Cont_i + \beta_{14} Year2014 + \beta_{15} Year2015 + \varepsilon$$

Regression models

Model 3: Disclosed connectivity of the capitals, assurance quality and information asymmetry

$$\ln(Spread) = \beta_0 + \beta_1 ConnectSc + \beta_2 AsQual + \beta_3 ConnectSc * AsQual + \beta_4 \ln(Tover) + \beta_5 \ln(Vola) + \beta_6 \ln(Mv) + \beta_7 \ln(Freefl) + \beta_8 FinAud + \beta_9 NonfinSc + \beta_{10} Auditcom + \beta_{11} GRI + \beta_{12} News + \beta_{13_i} \sum_{i=1}^{9} Ind_i + \beta_{14_i} \sum_{i=1}^{5} Cont_i + \beta_{15} Year2014 + \beta_{16} Year2015 + \varepsilon$$

Regression results

- Voluntary assurance statements are able to **increase the credibility** of integrated reports
- Assurance quality **does not show** an association with information asymmetry
- Combining a high disclosed connectivity of the capitals and a high assurance quality allows for a **significant decrease of information asymmetry**

			Model 1 Dependent variable: ln(*Spread*)		**Model 2** Dependent variable: ln(*Spread*)		**Model 3** Dependent variable: ln(*Spread*)	
Hypo-thesis	Variable	Exp. sign	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
	ConnectSc	(-)	-0.346	-2.12 **	-0.356	-2.15 **	0.025	0.12
H1	*As*	(-)	-0.291	-1.99 **	-		-	
H2	*AsQual*	(-)	-		-0.011	-1.33	0.116	2.19 **
H3	*ConnectSc*AsQual*	(-)	-		-		-0.036	-2.46 **
	ln(Tover)	(-)	-0.174	-4.74 ***	-0.176	-4.82 ***	-0.178	-4.88 ***
	ln(Vola)	(+)	0.240	1.09	0.265	1.22	0.279	1.26
	ln(Mv)	(-)	-0.181	-2.12 **	-0.179	-2.08 **	-0.183	-2.16 **
	ln(Freefl)	(-)	-0.386	-2.07 **	-0.378	-2.01 **	-0.368	-1.96 *
	FinAud	(-)	-0.171	-1.28	-0.159	-1.19	-0.141	-1.06
	NonfinSc	(-)	0.004	0.95	0.004	0.83	0.003	0.73
	Auditcom	(-)	0.111	0.50	0.091	0.40	0.054	0.24
	GRI	(-)	-0.066	-0.37	-0.102	-0.56	-0.122	-0.68
	News	(-)	0.000	0.23	0.000	0.21	0.000	0.21
	Industry controls		Yes		Yes		Yes	
	Continent controls		Yes		Yes		Yes	
	Year2014	(?)	-0.010	-0.09	-0.015	-0.13	-0.042	-0.36
	Year2015	(?)	0.193	1.21	0.189	1.17	0.185	1.16
	(Intercept)	(?)	1.833	0.91	1.947	0.96	0.849	0.42
Observations				256		256		256
R^2				0.3388		0.3313		0.3469
Adjusted R^2				0.2604		0.2521		0.2664
F-statistic				7.36***		7.14***		7.45***

Combined effects of disclosed connectivity of the capitals and assurance quality

Assurance quality / Disclosed connectivity of the capitals	Low	High
Low	Increase of information asymmetry due to missing disclosed connectivity of the capitals and assurance quality. ***(combined effect: +0.025)***	Disclosed connectivity of the capitals does not outweigh missing assurance quality. ***(combined effect: +0.150)***
High	Assurance quality does not outweigh missing disclosed connectivity of the capitals. ***(combined effect: +1.945)***	Combining assurance quality and disclosed connectivity of the capitals allows for the highest decrease of information asymmetry. ***(combined effect: -2.250)***

Additional/robustness analyses

- Development of an IR-specific assurance quality score
- Exclusion of first-time adopters of IR
- Exclusion of South African observations
- Exclusion of financial sector observations
- Endogeneity test on the decision to engage in non-financial assurance
- Panel regression analysis

Implications

Report preparers and standard setters

- Disclosing an integrated report without considering assurance quality **endangers improvements** of the information environment for investors
- Costs of disclosure and assurance of integrated reports are **solely outweighed by combining** high assurance quality and high disclosed connectivity of the capitals
- External assurance **serves as a governance mechanism** enabling the increase of credibility of integrated reports

Assurance providers

- **Emphasize descriptions of assurance characteristics** enabling assurance quality for investors

Thank you!
Questions and comments are very welcome!

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